

April

23rd

2017



Idlewild

Park

11a-6p

Fifth Annual Science Fair Packet



Ms. Beckham's
Class,
McQueen H.S
2013

Contact:

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Reno Earth Day is a 26 year old event in our area drawing thousands of attendees every year to learn about sustainable technologies, habits and resources in our area. Our goal is to provide a forum for widely diverse message to come together and for the general public to expand their knowledge base through attending. As the event continually evolves, a key focus for development is expanding the educational connections and promotion with the event. The organizers are working with UNR, TMCC and DRI to produce strong coordinated exhibits to show our areas innovating work in agriculture, earth sciences, water conservation, air quality and natural resources. We are working to include and promote strongly informative educational workshops during the event showing how new technologies work, practices for healthier habits and natural science topics. We hope for these to turn into seminar style sessions that people look for and teachers eventually give credit – extra credit for attending.

Earth Innovations is our newest outreach to bring a strong science component to the event. A large component of Earth Day goals is sustainability – whether that is renewable fuel and energy sources, new technologies for reducing or cleaning up pollution and other human impacts, conservation of natural resources through both technologies and habits, new agricultural technologies – this could go on forever. Earth Innovations seeks to explore and engage the ideas of our young minds in these areas as young minds are key to a sustainable future.

Earth Innovations this year will include a Science Fair with all Washoe County high schools invited. Teachers may use the Science Fair to supplement or enhance their existing curriculum, as extra credit assignments, as a special class project or school projects, or as an added component of an existing fair. Entrants may be individuals or groups of up to 6 people from a class, a school club or other school sponsored event/group. Our rules for the Science Fair will seek to allow maximum creativity and exploration of ideas for the student, while still remaining safe and logistically feasible for the special event. The judging panel will be comprised of Reno Earth Day staff and volunteers (a diverse array of citizens with various backgrounds) plus seats from UNR's science departments and other environmental non-profit organizations. Winners will be chosen based on the most innovative/creative, most Earth Day related message/theme/research, and for the most scientifically defensible projects. In future years, this science fair may grow to include additional prizes for special categories, but this year, the sky will be the limit! Approximately 20-30 entries will be selected to be showcased at the **Reno Earth Day celebration at Idlewild Park on April 23, 2017**. Projects will be exhibited, demonstrated by students, and winning awards will be presented on stage at Reno Earth Day in front of the audience. ALL participants will receive a Certificate of Participation and Thanks from Reno Earth Day.

We welcome ideas and feedback from teachers, parents and students in this process, and hope to make Earth Innovations and fun and enlightening activity for everyone involved, and a valuable installation of the ongoing Reno Earth Day event.



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Science Fair Rules and Guidelines

1. All work presented must be the student's work. Outside parents, teachers and professionals can work as guides and can supervise the investigation, but should not take part except in cases of safety. Parents cannot participate in the preparation or presentation, except to help with materials and act as an audience for practice.
2. All outside assistance and research needs to be cited, using the citation sheet included in this packet.
3. Projects may be completed by an individual or in a group of no more than six students.
4. There is a big difference between experimenting with animals and observing their behaviors in their natural environment. Behavioral observations are allowed as long as no harm (physical or psychological) comes to the animal.
5. Non-live animals and insects must not be exhibited and are not permitted for use in this event. Live plants or small animals (under 2 lbs.) can only be exhibited if they can be left on display for at least 24 hours in a secure and humane habitat. Observations can be displayed through photos if the subject does not meet these requirements.
6. Dangerous chemicals, drugs, heat or flame, and explosives must not be exhibited, and are not permitted by municipal/state laws for this event. Slightly corrosive chemicals (cleaners, mild acids and bases) can be used, but must be completely contained if brought in to show at the presentation.
7. The student's name and any identifying information may appear only on the back of the project. A copy of the completed registration form should be taped to the back of the display board. Names and faces may not be visible during judging. Awards, ribbons grades from previous assessments must be removed before Reno Earth Day judging.
8. When set up for display, the project must be able to stand on a table or the floor by itself for at least 24 hours. Reno Earth Day staff will not be able to repair a poorly constructed display or in any other way attend to equipment. As it is often necessary to move projects after they are set up, the entire display must be sturdy and easily portable. If display of experimental apparatus is not possible; please use photographs, descriptions, and diagrams instead.
9. Any of the electrical apparatus used in experiments must be built according to standard electrical safety laws. Projects that utilize 100 or more volts may not use push-button switches (doorbell type) or open-knife switches. All projects using 100 or more volts must have a main disconnect switch. All wires must be of the size and insulation appropriate for



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the current and voltage used. All electrical apparatus of 100 or more volts must be enclosed to prevent users from receiving an electrical shock.

10. Students must follow any other rules for general safety required by their school, teachers, WCSD or other governing body.
11. Reno Earth Day staff reserves the right to remove from display and, if necessary, dispose of inappropriate items as outlined above. Final decision as to the appropriateness of any item is at the discretion of the Science Fair Coordinator.
12. Entrants are responsible for the installation, maintenance, and removal of their projects. All projects must be removed from the California Building by 7pm on April 23, 2017. Leftover projects will be discarded after this time. Reno Earth Day staff will not be responsible for the security of items exhibited.
13. Entrants will have the opportunity to present an oral presentation of their project for the judges the day of the event at approximately 3:00 pm. Participants are encouraged to present and demonstrate their projects during the event where feasible. If the nature of the project can only be demonstrated once, this demonstration should be saved for the judging. Presentation for the judging should be a maximum of 3 minutes each.
14. All participants in the fair will receive a Certificate of Participation. Category winners will receive prizes from a diverse pool of prizes donated by local business and organizations.
15. Judging will be done on site the day of the event, April 23, 2017. Winners and prizes will be announced at approximately 4:00 pm on event day on one of our prominent stages.
16. The entire program, participating schools and teachers, winners and prizes will all be featured on our event website, press releases and possible public service announcements leading up to and after the event.



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Parent Letter

Dear Parents:

As you know, science, technology and engineering are basic skills expected by employers. As Twenty First Century citizens, your children will also have to make some of the toughest decisions of any generation, based on their understanding of emerging science and technology.

Science fairs get students involved in the practices of science and engineering, requiring them to apply those skills to a topic of interest to them. Scientific process and math also help children learn problem solving skills, performance measurement skills and responsibility that will prove invaluable to them in any field they follow.

The Reno Earth Day Celebration is holding a special science fair called Earth Innovations in coordination with schools in Washoe County. All students in grades 9-12 have been invited to participate in developing a science project. Earth Innovations will be featured at the Reno Earth Day special event on April 23, 2017 at Idlewild Park in front of a crowd of thousands of people. Hands-on scientific investigation and invention are the focus at our particular fair this year. Over the next 6 weeks, your child will design, test, analyze, and present a project that uses scientific methods to explore the natural sciences, new technologies, processes and results!

Please note that the bulk of the work will be done at home. Students will be given project guidelines and timelines at school, and teachers will check in with them periodically. However, most of the work will be self-directed. Parents are encouraged to offer emotional support and reminders, but to allow children to do the projects by themselves.

We encourage you to visit the www.renoearthday.com for more information on the event and the science fair, or ask your child's teacher. Don't hesitate to call or email with any questions. Thank you very much in advance for your support!

Most Sincerely,

Ethan Pendragon
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Science Fair Registration Form

Project Title: _____

Student Name(s): _____ Date: _____

School: _____ Teacher: _____

Detailed Description of Project: _____

Display Dimensions: Width _____ Length _____

Height _____ Weight _____

Electricity Requirements: _____

Special containment/ventilation/etc. requirements (note, student must provide these as part of their project, but they must be described here):

Why have you chosen to do this project? _____

How do you feel this project promotes Earth Friendly innovation or education (if any)? _____



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Sample Timeline for Science Fair Milestones

Activity	Time Before Science Fair
Official Announcement to all Schools	15 weeks (January 2017)
Announcements to Students by schools/teachers	8-15 weeks (by March 2017)
Questions and Clarifications with Reno Earth Day	8-15 weeks (by March 2017)
Entrants/Schools submit expected list of participating entrants to Reno Earth Day	8-6 weeks (by March 2017)
Entrants/Schools submit final list of participants and registration forms to Reno Earth Day	6 weeks (by March 2017)
School Level Presentations/Fairs/Judging	1-3 weeks (teacher's discretion)
Set up/demonstrations at Reno Earth Day event/Judging and awards ceremony	Day of Event – April 23, 2017

Sample Timeline for Science Fair Participants

Activity	Time Before Science Fair
Decide on topic and develop question or solution	8-6 weeks
Background research on topic	8-6 weeks
Determine materials and purchase them	6-5 weeks
Set up project and begin to collect data	6-4 weeks depending on project
Shop for project display supplies	3 weeks
Prepare project display	2 weeks
Prepare oral presentation	1 week
Present project to class	Teacher's discretion
Set up/demonstrate project at Reno Earth Day	Sunday, April 23, 2017



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Sample Judging Criteria

Projects will be judged on the following criteria. Other items may be added by the judging panel at their discretion.

Judging Criteria

- Project Creativity and Originality
- Innovations
- Visual Presentation
- Oral Presentation
- Explanation of the Process
- Relation to Earth Day Ideas
- Scientific Method Employed

Winning Categories

- Most Creative/Innovative Project(s)
- Project(s) with the Most Earth Day Related Theme
- Most Scientifically Defensible Project(s)
- Most Popular Public Favorite Voted Project(s)

Sample Prize List

Individual Prizes:

- ✚ Cash Cards
- ✚ Laptop Computer
- ✚ Bicycle
- ✚ iPod
- ✚ AmazonKindle

Group Prizes:

- ✚ Cash Cards
- ✚ Dinner Party
- ✚ iTunes Cards



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Students Final Check List

Did you remember to...

- Include every required category (Hypothesis, Procedure, Materials, etc.)?
- Label every chart, graph and illustration?
- Provide a caption for every photograph?
- Proofread every word on your display board?

Ask yourself...

- Is the type large enough to read from afar? Stand 3 feet away to check.
- Are lines straight? Are text blocks and graphics properly aligned? (You can re-do a section by covering mistakes with matching colored paper and pasting new text and graphics over that. This time use a ruler!)
- Does the display look overly crowded with information? If so, consider removing some less important items and displaying them creatively on the table instead.
- Are there any empty spaces on the board? If your layout looks uneven, consider adding some items to balance it out.
- Did you follow all rules and guidelines pertaining to your particular fair?
- If you require electricity, have you checked to make sure any plugs or wiring are up to safety codes?
- Have you packed a "repair kit" of supplies for any last-minute touch-ups at the fair?